

Message Text

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SUBJECT: ATOMIC ENERGY AGREEMENT; CTR (07.03) FISSION-FUSION
SEMINAR PROVIDES INSIGHTS INTO SOVIET ATOMIC ENERGY POLICY

SUMMARY. THE US-USSR FISSION-FUSION SEMINAR PROVIDED CONFIRMATION OF SOVIET ENERGY PLANS AT A TIME WHEN THE NUCLEAR POLICIES OF BOTH NATIONS APPEAR TO BE DIVERGING. THE SOVIETS SEEM FIRMLY WEDDED TO WIDE-SCALE DEPLOYMENT OF NUCLEAR ENERGY DOMESTICALLY AND APPARENTLY ASSUME THERE WILL BE A LARGER FOREIGN DEMAND FOR SOVIET NUCLEAR-POWERED PLANTS AND FUELS. THEIR CALCULATIONS LEAD TO THE CONCLUSION THAT PLUTONIUM BRDING IS THE MOST FEASIBLE, INDEED PERHAPS THE ONLY, MEANS OF MEETING FUTURE ENERGY REQUIREMENTS. END SUMMARY.

1. THE US-USSR FISSION-FUSION SEMINAR, HELD IN MOSCOW AND LENINGRAD MARCH 21-29, WAS, ACCORDING TO US PARTICIPANTS, WELL ORGANIZED, FRANK, AND SUBSTATIVE. IT PROVIDED THE FOLLOWING
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INSIGHTS INTO SOVIET NUCLEAR ENERGY POLICY AND PLANS:

(A) ENERGY DEMAND PROJECTIONS - IN MAJOR SOVIET ADDRESS TO THE SEMINAR, V. V. ORLOV, RECENTLY APPOINTED AS DIRECTOR OF SOVIET FISSION-FUSION DEVELOPMENT AT KURCHATOV INSTITUTE, PRESENTED A WIDE-RANGING RATIONALE FOR THE RAPID DEVELOPMENT OF ATOMIC POWER AND, IN PARTICULAR, BREEDER REACTORS AND FISSION-FUSION HYBRIDS.

U.S. PARTICIPANTS NOTED THAT ALL OF ORLOV'S TALK WAS CAST IN WORLDWIDE, RATHER THAN DOMESTIC SOVIET, DEMAND PROJECTIONS AND THAT HE EMPHASIZED USES OF NUCLEAR POWER BEYOND ELECTRICAL POWER PRODUCTION, E.G., DISTRICT HEATING AND INDUSTRIAL STEAM, ICE-BREAKERS AND DESALINIZATION. ACCORDING TO ORLOV'S PROJECTIONS, URANIUM SUPPLY AND ENRICHMENT FACILITIES, WHICH ARE SUFFICIENT TO MEET PRESENT NEEDS, WILL BE OUTSTRIPPED BY SHARPLY RISING NUCLEAR ENERGY DEMANDS BY THE NEXT DECADE.

(B) SOVIET NUCLEAR RESEARCH AND DEVELOPMENT - THE SEMINAR UNDER-LINED TO U.S. PARTICIPANTS THAT THE SOVIETS CONSIDER THE PLUTONIUM FUEL CYCLE AS THE ONLY PRACTICABLE MEANS OF MEETING RISING ENERGY DEMANDS. THE SOVIETS CONSIDER THAT THEIR FAST-BREEDER REACTOR PROGRAM IS ONLY THE FIRST LEG IN ESTABLISHING THE PLUTONIUM FUEL CYCLE. THE BN-600, PRESENTLY UNDER CONSTRUCTION AT BELOYARSK AND EXPECTED TO BE FULLY OPERATIONAL IN THE EARLY 1980'S, WILL DEMONSTRATE FULL-SCALE COMMERCIAL APPLICATION OF BREEDER REACTORS. CONCOMITANTLY, THE SOVIETS ARE PLANNING MAJOR MODIFICATIONS OF THE TOKAMAK FUSION REACTOR (TO BE KNOWN AS THE T-10-M) AND HAVE ASSIGNED TO IT TECHNICAL EXPERIMENTS ORIGINALLY PLANNED FOR THE T-20 TOKAMAK. WHILE THIS MAY DELAY BY SEVERAL YEARS THE START-UP DATE FOR THE T-20 (IT IS NOW EXPECTED TO GO ON LINE ABOUT 1985) THE T-20 THUS WILL BECOME AVAILABLE FOR FULL-SCALE DEMONSTRATION OF A COMMERCIALY FEASIBLE HYBRID BREEDER. SOVIET PLANS CALL FOR HYBRIDS TO BEGIN TO TAKE OVER THE MAJOR TASK OF PLUTONIUM BREEDING BY THE END OF THE CENTURY.

(C) NONPROLIFERATION AND ENVIRONMENTAL CONCERNS - DURING THE LIMITED OFFICIAL USE

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SEMINAR THE SOVIETS PAID LITTLE ATTENTION TO NONPROLIFERATION ISSUES AND ENVIRONMENTAL EFFECTS OF A PLUTONIUM-FUEL-CYCLE ENERGY ECONOMY; THE IMPRESSION GAINED BY THE U.S. PARTICIPANTS WAS THAT THE SOVIETS BELIEVE THAT THESE PROBLEMS WILL BE SOLVED IN DUE COURSE AND THAT THEY SHOULD NOT INHIBIT IN ANY WAY RESEARCH AND DEVELOPMENT ON THE PLUTONIUM FUEL CYCLE. THERE WERE SOME MARGINAL DISCUSSIONS OF REGIONAL REPROCESSING CENTERS AS THE PREFERRED MEANS TO AVERT PROLIFERATION DANGERS. EVEN LESS ATTENTION WAS PAID TO STORAGE OF SPENT FUEL AND OTHER RADIOACTIVE WASTE; THE SOVIETS SEEMINGLY ASSUME THAT UNDERGROUND STORAGE OF CONCENTRATED WASTES WILL PROVE A PRACTICABLE SOLUTION. THE SOVIETS ARE ALSO APPARENTLY UNINTERESTED IN THE THORIUM CYCLE, CLAIMING THAT THE PHYSICS HAVE BEEN LARGELY UNEXPLORED AND THAT THORIUM IS INHERENTLY A MUCH LESS SATISFACTORY FERTILE MATERIAL THAN U-238.

2. COMMENT. SOVIET COMMITMENT TO NUCLEAR POWER AND, CONCOMITANTLY, THE PLUTONIUM CYCLE EVIDENT AT THE FISSION-FUSION SEMINAR CANNOT BE DISMISSED SIMPLY AS THE EXPRESSION OF THE ENTHUSIASM

OF SOVIET SCIENTISTS AND ENGINEERS PUSHING THEIR OWN PET PROJECTS. IT HAS TAKEN ON THE AURA OF ONE OF THE KEYSTONE PROGRAMS IN OVERALL ECONOMIC DEVELOPMENT OF THE SOVIET UNION. THE FAST-BREEDER REACTOR PROGRAM WAS THE SUBJECT OF A MARCH 27 PRAVDA ARTICLE WHICH CITES THE DECISION OF THE 25TH PARTY CONGRESS TO ACCELERATE DEVELOPMENT OF THESE REACTORS; FURTHER HIGH-LEVEL INDICATION OF THE BREEDER'S IMPORTANCE CAME TO LIGHT IN A DISCUSSION, MARCH 28, BETWEEN ASSISTANT SECRETARY HARTMAN AND DEPUTY CHAIRMAN OF THE STATE COMMITTEE ON ATOMIC ENERGY (SCAE) MOROKHOV (MEMCON POUCHED FOR EUR/SOV).

3. THE MOST RECENT LIST OF SOVIET NUCLEAR POWER PLANTS FORESEES APPROXIMATELY 20 MILLION MEGAWATTS INSTALLED NUCLEAR POWER BY 1980 AND INDICATES A FIRM COMMITMENT TO AT LEAST 16.9 MILLION NUCLEAR MEGAWATTS AFTER THAT DATE, UNDERSCORING THE SOVIET CONCERN FOR A GUARANTEED SOURCE OF FISSILE MATERIAL FOR ELECTRICAL POWER PRODUCTION THROUGH THE END OF THE CENTURY. LIMITED OFFICIAL USE

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IN ADDITION, THE SOVIETS HAVE SHOWN HIGH INTEREST IN NUCLEAR POWER FOR OTHER PURPOSES; A RECENT U.S. DELEGATION ON HEAT-REJECTION SYSTEMS UNDER THE ENERGY AGREEMENT NOTED STRONG SOVIET INTEREST IN DEVELOPMENT OF NUCLEAR STATIONS FOR DISTRICT HEATING AND INDUSTRIAL STEAM, AS WELL AS ELECTRICAL PRODUCTION. (THIRTY-FIVE PERCENT OF ALL CONVENTIONAL POWER IN THE SOVIET UNION IS PRODUCED AT PLANTS WITH THIS DUAL CAPACITY.) IN A CONVERSATION WITH SCICOUNS ON MARCH 30, N.N. INOZEMTSOV, DIRECTOR OF THE INSTITUTE OF WORLD PLANNING AND ECONOMICS, NOTED THE SOVIET ATTACH ENORMOUS IMPORTANCE TO THE SUCESSFUL VOYAGE IN MARCH OF THIS YEAR OF THE NUCLEAR ICE-BREAKER ARKTIKA FROM MURMANSK TO THE YAMAL PENINSULA, ADDING THAT THIS ASSURES DEVELOPMENT OF THE TYUMEN GAS FIELDS, AND THUS LAYS A SOLID FOUNDATION FOR THE ECONOMIC DEVELOPMENT OF SIBERIA AS A WHOLE. FINALLY, THE SOVIETS APPARENTLY SEE SALE OF NUCLEAR PLANTS AND FUEL OVERSEAS ASA MEANS TO BOLSTER HARD-CURRENCY EARNINGS. THEIR SALE OF A REACTOR TO FINLAND AND THE REPORTED CONCLUSION OF A SALE TO LIBYA MAY BE JUST THE TIP OF THE ICEBERG ONCE THE VOLGODONSK REACTOR FABRICATION PLANT BEGINS FULL-SCALE PRODUCTION IN THE EARLY 1980'S. END COMMENT TOON

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